

Molnar discloses a motor, having a rotor constructed to facilitate position sensing and a stator constructed to retain slot liners in the steer while reducing flux leakage between adjacent teeth of the stator. The stator includes a stator core 16 having a central stator bore and windings 18 wound on the stator core. The stator laminations are lined to define stator core slots 62 and the teeth 64 of the stator laminations are aligned to form stator core teeth 64. (Figures 2 and 3) As depicted in figure 5, each stator tooth has one coil disposed therein.

In contrast, Applicant's invention of independent claim 1, as amended, requires "independently wound conductive coils deposited on the sleeve and disposed between said sleeve and said rotor and adjacent to the stator." (claim 1, as amended).

By constructing a torque motor as shown in Applicant's Figure 2 where the conductive coils are wound independently and disposed on the sleeve and not the stator, Applicant's invention of independent claim 1 achieves significant advantages over the stator tooth windings disclosed by Molnar. For example, the position of the independently wound conductive coils increases the response time of the torque motor of the present invention over conventional tooth designs, such as described by Molnar.

Claims 2-10 depend directly or indirectly from applicant's invention of independent claim 1, and thus, must be read in corporately limitations of claim 1, as amended. Thus, these claims are allowable for this reason, as well as there own patentable limitations. Claim 22 has been cancelled by way of this amendment, therefore no specific discussions of the Examiner's art rejection regarding this claim is believed necessary.

Accordingly, it is respectfully submitted that the examiners rejection of claims 1-10 under 35 USC §102(b) as being anticipated by Molnar is an error, and should be withdrawn.

Claims 11-21 stand rejected under 35 USC §103 as being unpatentable over Montagu in view of Molnar. Claim 11 has been amended in a similar fashion to independent claim 1, discussed above in detail, and requires “independently wound conductive coils disposed on said sleeve and disposed between said sleeve and said rotor and adjacent to said stator”.

Montagu discloses a galvanometer which includes a cylindrical magnetic rotor polarized in two essentially semi-cylindrical poles. Two coil portions are deposited on opposite's sides of the rotor, separated by a plane of symmetry that is an essential alignment with the poles of the rotor. Importantly, nowhere does Montagu disclose or suggest the independently wound conductive coils as required by Applicant's invention of claim 11.

The deficiencies of Molnar are discussed above in detail vis-a-vis Applicant's inventions independent claim 1. It is not seen how Molnar supplies the missing teachings to Montagu to achieve there render obvious Applicant's invention of independent claim 11, to wit, the specific limitations of independent claim 11 that require the independently wound coils and their position relative to the other claimed limitations, i.e. the stator, the sleeve, and the rotor.

Claims 12-21 depend directly or indirectly from Applicant's invention of independent claim 11, thus, must be read incorporating the limitations of claim 11, as

amended. Thus, these claims are allowable for this reason, as well as their own patentable limitations.

Accordingly, since no combination of Montagu or Molnar could achieve or render obvious Applicant's invention of independent claim 11, it is respectfully submitted that the Examiner's rejection of claims 11-21 under 35 USC §103 as being unpatentable or Montagu in view of Molnar is an error, and should be withdrawn.

Having dealt with all the objections raised by the examiner, it is respectfully submitted that the present application, as amended, is in condition for allowance. Thus, early allowances earnestly solicited.

In the event the Examiner deems personal contact is necessary, please contact the undersigned attorney at (603) 668-6560.

A check in the amount of \$465.00 is included herewith to cover a three month extension of term, thereby extending the term for response to the present official action from December 12, 2002 to March 12, 2003. No separate petition for an extension of term is believed necessary, but the office should consider the present amendment and an accompanying a check as a formal petition, if necessary.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our deposit account No. 50-2121.

Respectfully submitted,



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MARKED UP COPY OF THE CLAIMS

1. (Amended) A torque motor comprising:

a stator defining a rotor opening;

a sleeve disposed adjacent said stator within said rotor opening;

a rotor disposed within said rotor opening, the rotor comprising a magnet disposed on

a shaft; and

independently wound conductive coils disposed on said sleeve and disposed between

said sleeve and said rotor and adjacent to said stator; said sleeve being shorter than the

magnet and the coils and including the turn around zones beyond respective ends of the

sleeve.

[a stator comprising sleeve with conductive coils disposed thereon the stator defining a rotor opening, and

    a rotor disposed in the rotor opening, the rotor comprising a magnet disposed on a shaft, the sleeve being shorter than the magnet and the coils including turn around zones beyond respective ends of the sleeve.]
11. (Amended) An optical scanner comprising:

an optical element configured to direct light from a light source;

a torque motor comprising [a stator and a rotor];

a stator defining a rotor opening;

a sleeve disposed adjacent said stator within said rotor opening;

a rotor disposed within said rotor opening, the rotor comprising a magnet

disposed on a shaft; and

independently wound conductive coils disposed on said sleeve and disposed  
between said sleeve and said rotor and adjacent to said stator; said sleeve being  
shorter than the magnet and the coils and including the turn around zones beyond  
respective ends of the sleeve.

[the stator comprising a sleeve with conductive coils disposed thereon, the stator defining a rotor opening; and

the rotor disposed in the rotor opening, the rotor comprising a magnet disposed on a shaft, the sleeve being shorter than the magnet and the coils including turn around zones beyond respective ends of the sleeve.]